Air Force SBIR **Impact**

3-D Visualization Analyzer

Company:
FAAC Incorporated

Location:
Ann Arbor, MI

Employees:
55

President/CEO:
Al Jordan

Project Officer:
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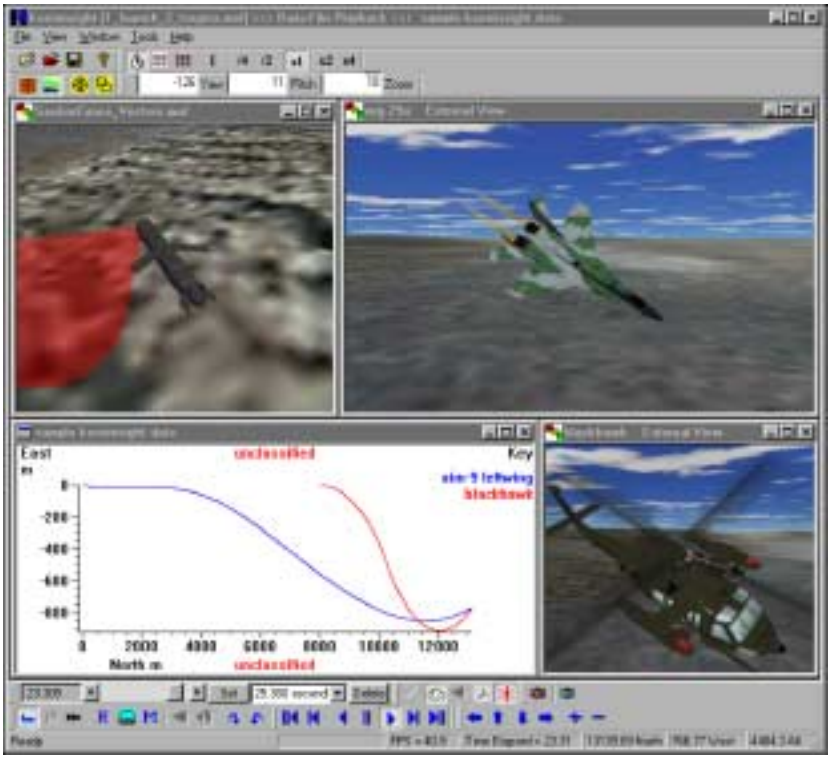

KeenInsight™ In Action, a custom designed Microsoft Windows-based application, brings 3-D visualization of munitions to the Desktop PC.

Air Force Requirements:

Today's Air Force weapon systems and engagement doctrine are highly complex. The process of developing and evaluating these systems includes data collection, end-game results, and the use of two dimension (2-D) graphs. The Air Force wanted to develop a new tool that would provide the developer with enhanced capabilities for evaluating these systems as a single entity rather than a collection of separate data points. Representing visual information in a 3-D format could allow consolidation of all available kinematic information into a single presentation of information while reducing the need for professional manpower to evaluate the engineering data.

SBIR Technology:

FAAC Incorporated delivered a novel 3-D visualization analyzer to the Munitions Directorate under an Air Force Phase II SBIR contract. The 3-D visualization analyzer, known as KeenInsight™, has successfully brought 3-D visualization to desktop Window PCs. It creates realistic flyout visualizations using current PC graphics hardware. KeenInsight™ proved the benefits of 3-D analysis and confirmed that the process of creating a flexible munition flyout visualization doesn't need to be complicated or time consuming.

For more information on this story, contact Air Force TechConnect at 1-800-203-6451 or at www.afrl.af.mil/techconn/index.htm

KeenInsight™ was designed to give the creators of munition flyout simulations the ability to quickly create 3-D visualizations on their desktop PCs. Specifically, the evaluation process showed that 3-D visualization is useful for three phases of the flyout simulation process: 1) test/debug, 2) analysis, and 3) presentation. KeenInsight™ utilizes information produced off-line (by engineering simulations or other suitable sources) to provide a graphical interactive depiction of real world engagements involving three-dimensional entities representing launchers, weapons, and targets. The application has four key elements: 1) a Graphical User Interface (GUI), 2) a detailed data interface of displayable information used to drive 3-D representations, 3) a real-time graphics generator, and 4) the ability to import realistic terrain databases and 3-D object models for launchers/targets/ weapons. The hardware required to operate KeenInsight™ is affordable and commonly available in today's desktop PCs.

Company Impact:

FAAC has been successful in transitioning derivatives of technological advancements made during this program to both the Department of Defense (DoD) and the private sector. Additional investments have been made by FAAC Inc., as other sources have taken the graphics technology originally developed for KeenInsight™ and applied it to the vehicle driver training simulator market. The PC graphics-based simulators provide low life-cycle costs and easily maintainable systems. PC image generator components, which are directly related to the graphics technology developed during this program, have been integrated as part of the United States Marine Corps (USMC) Medium Tactical Vehicle Replacement-Training System (MTVR-TS). FAAC is also integrating the PC graphics technology into the multi-spectral man-in-the-loop cockpit simulator being developed for the Guided Weapon Evaluation Facility (GWEF) at Eglin Air Force Base. Within one year of completion of the Phase II SBIR, 300 graphics channels have been delivered to government and commercial customers.

Company Quote:

"This SBIR award provided an avenue to not only enhance Air Force weapon system analysis capability but to also revolutionize the graphics technology used in FAAC's simulation products. Through the development of KeenInsight™, FAAC was able to exploit the leading edge of PC graphics to provide an image generation capability for our line of driver training simulators used by both military and commercial customers. FAAC is grateful to have participated in the SBIR program and pleased with the benefits it has provided the Air Force and us."

Al Jordan
President and CEO
FAAC Incorporated

SBIR

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